

Activity 1

Sedimentary Rocks and the Geologic History of Your Community

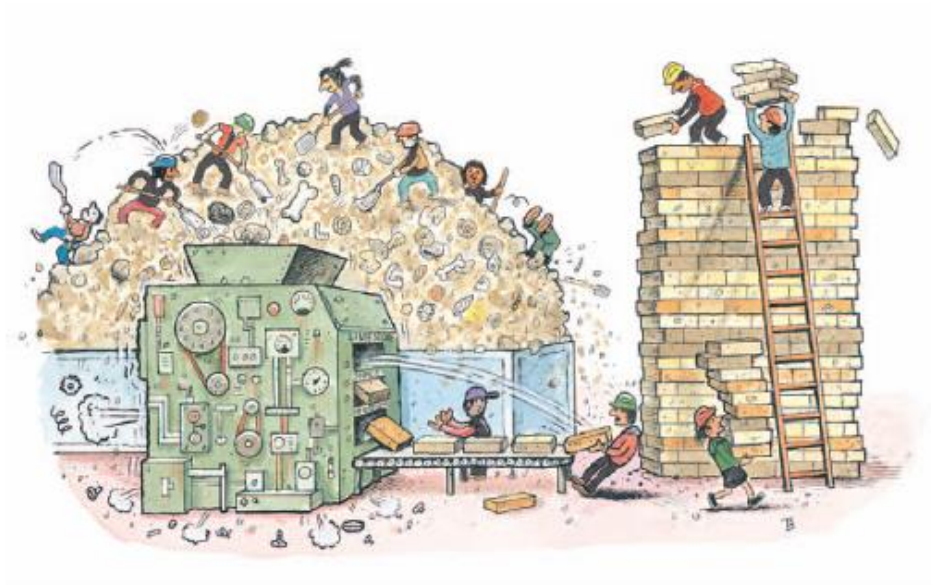
Think About It

Date _____

Page U4 _____

Page # _____

- How does sediment
“turn into”
sedimentary rock?



WHAT DO YOU THINK?

Activity 1
Sedimentary Rocks and the
Geologic History of Your Community

Investigate Part A

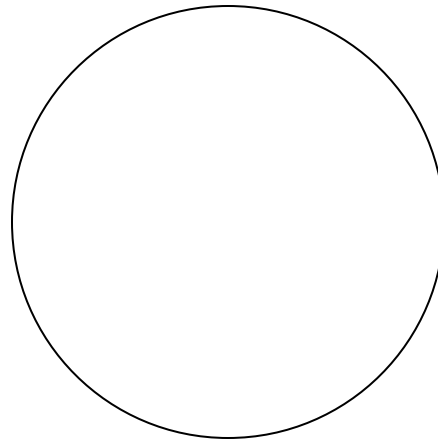
Page U4

Date

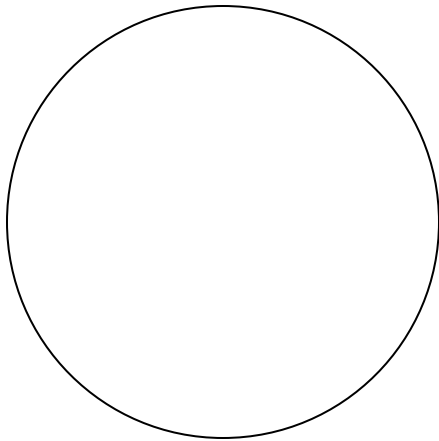
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6a. Draw a labeled
diagram of each
sedimentary rock
that you made.

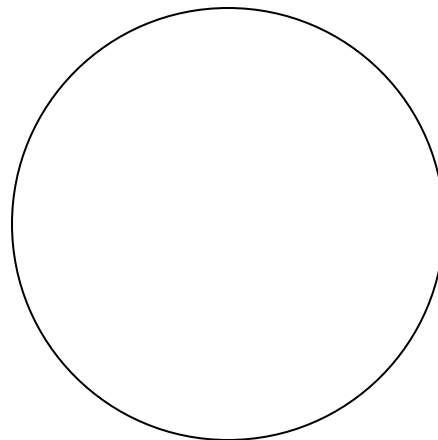
mudstone



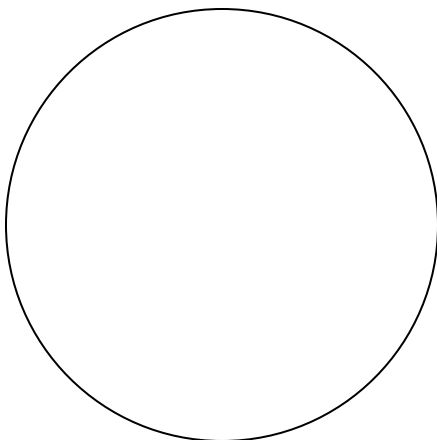
rock salt



sandstone



conglomerate



Activity 1

Investigate Part B

Page U6

Date

Page #

1a. Make a data table.

Rock	Description	Sedimentary Type	Name
1			
2			
3			
4			
a			
b			
c			
d			
e			
f			

Activity 1

Investigate Part C

Page U4

Date

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1a. Are any sedimentary rocks described in the legend?

1b. What are the most common sedimentary rocks in your area?

1c. Which is the oldest sedimentary rock unit?

1d. Which is the youngest sedimentary rock unit?

Activity 1

Sedimentary Rocks and the Geologic History of Your Community

Digging Deeper

Pages U8-U12

Date _____

Page # _____

<http://www.brainpop.com/science/earthsystem/typesofrocks/>
/

Learning Objective: **In writing, SWBAT describe the processes of weathering and erosion and list causes of each using academic language in order to understand how sedimentary rocks form and change.**

Weathering

a process that breaks solid rock into sediments

Causes of
weathering

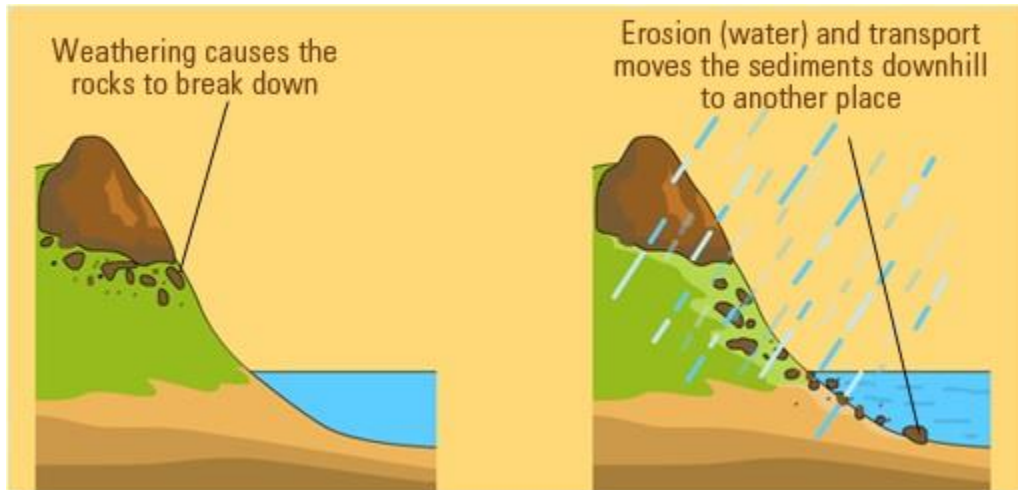
- heat
- water
- wind
- ice
- plant growth
- chemicals (acid rain)

http://www.classzone.com/books/earth_science/terc/content/visualizations/es1305/es1305page01.cfm?chapter_no=visualization

<http://www.brainpop.com/science/weather/weathering/>

Erosion

the movement of sediments to a new location



Causes of erosion

- water
- wind
- gravity
- glaciers

<http://www.brainpop.com/science/earthsystem/erosion/>

http://www.classzone.com/books/earth_science/terc/content/visualizations/es1303/es1303page01.cfm?chapter_no=visualization

http://www.classzone.com/books/earth_science/terc/content/visualizations/es0604/es0604page01.cfm?chapter_no=visualization

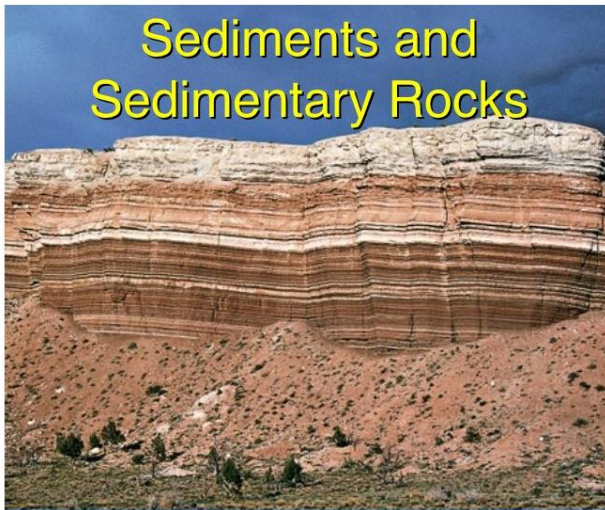
<http://www.learner.org/interactives/rockcycle/change3.html>

How sediments
form

the processes of weathering and erosion break solid rock down into sediments and deposit them in new locations



a rock formed when sediments are deposited into layers



3 types of
sedimentary rocks

- 1.
- 2.
- 3.

Table 6-2 Classification of Sedimentary Rocks

Rock Type	Rock Name	Method of Formation
Clastic Coarse-grained Medium-grained Fine-grained	Conglomerate or breccia Sandstone Shale	Lithification of clastic sediments
Chemical Calcite Halite Gypsum	Limestone Rock salt Rock gypsum	Precipitation of dissolved minerals from water
Organic Calcium carbonate—shells plant matter	Limestone Coal	Accumulation and lithification of remains of living things



a sedimentary rock made up mostly of pieces of older, broken rock that may become compacted and cemented into solid rock

Examples of clastic sedimentary rock

-
-
-
-
-
-

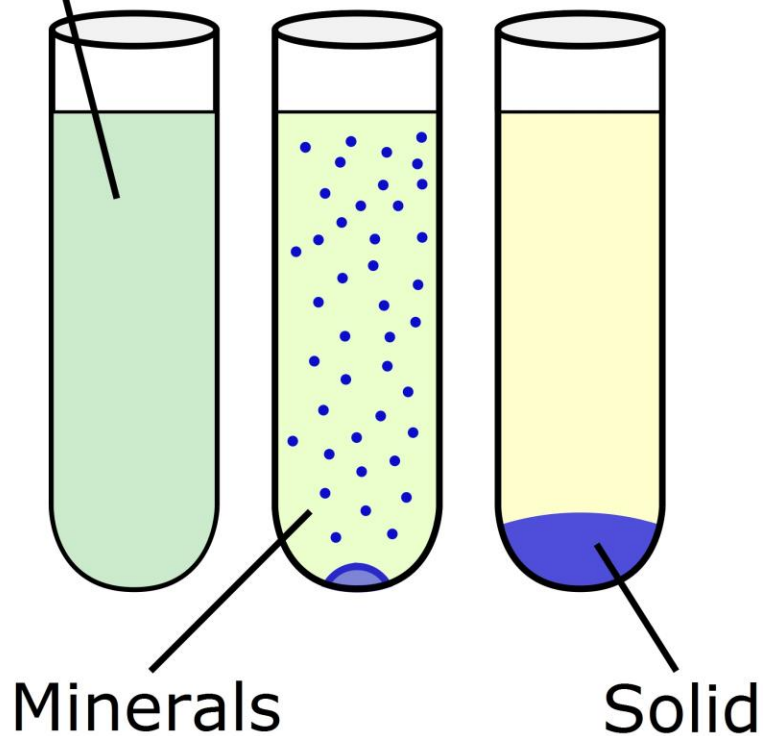


Table 6-1 Classification of Clastic Sediments		
Particle Size	Sediment	Rock
> 256 mm 256–64 mm 64–2 mm	Gravel } Boulder Cobble Pebble	Conglomerate
2–0.062 mm	Sand	Sandstone
0.062–0.0039 mm	Silt	Siltstone
<0.0039 mm	Clay	Mudstone or shale



a sedimentary rock formed by chemical precipitation of minerals from a solution

Solution



Examples of chemical
sedimentary rock

-
-
-
-



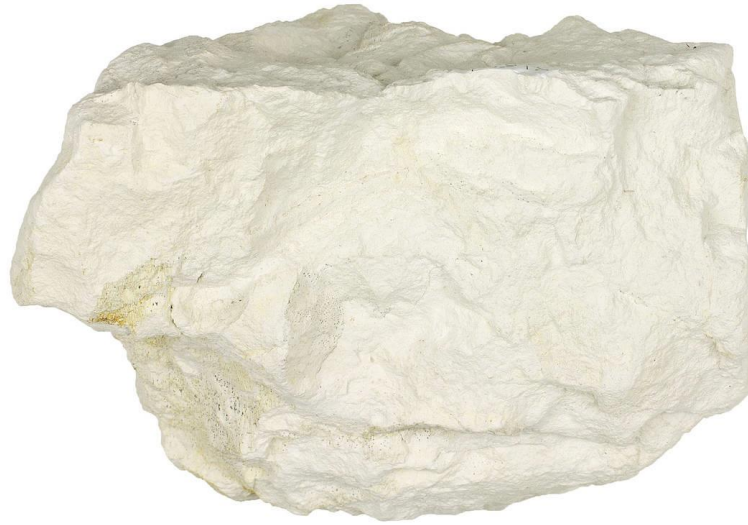
is the most common chemical
sedimentary rock



a sedimentary rock made
mostly of the remains of
organisms that have been
compacted together

Examples of organic
sedimentary rock

-
- chalk



How coal forms

when plants in swamps with rich vegetation die and are buried by the remains of later plant

Over time, the plant material is compacted so much by the weight of overlying sediment that it is turned into rock



the first material to form, is not yet buried very deeply

Used by humans for fuel and agriculture





brown coal

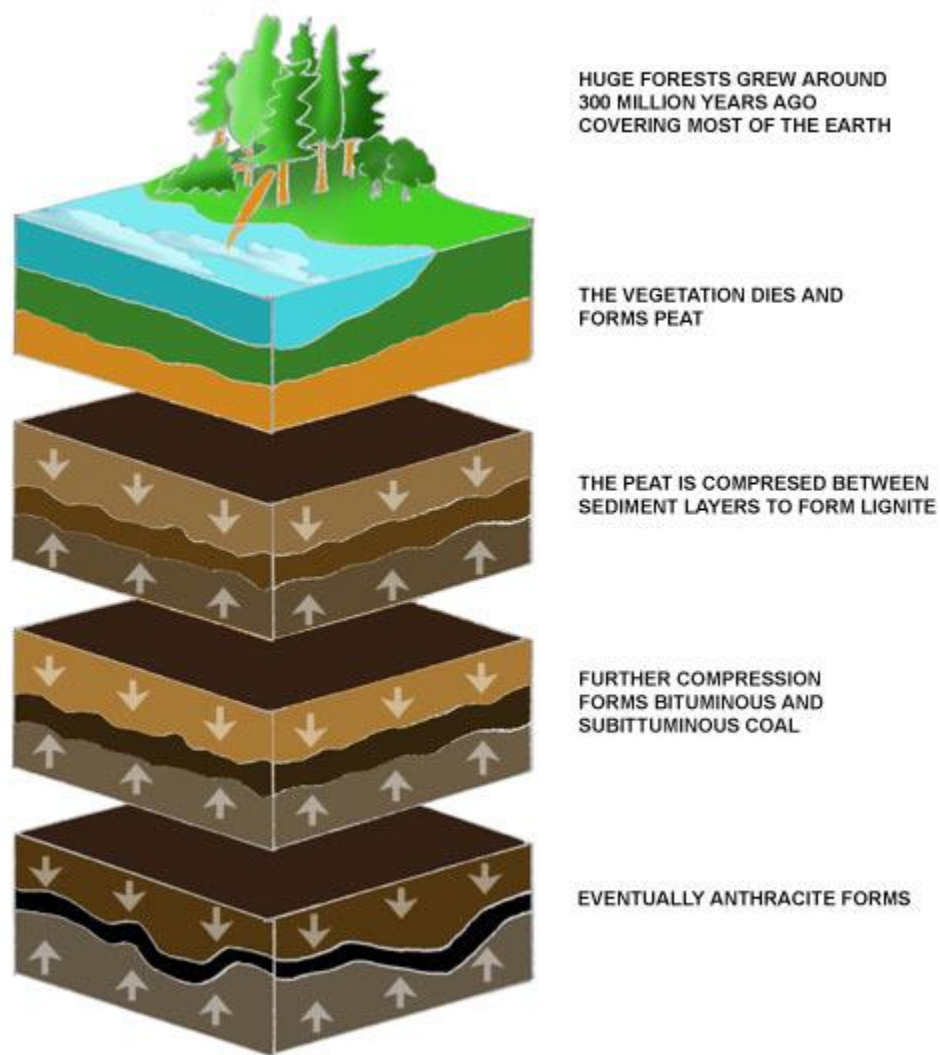


soft coal



hard coal





http://www.hk-phy.org/energy/power/source_phy/flash/formation_e.html

Coal	forms in tropical to subtropical climates
Ancient coal	found in Antarctica suggests that climate has changed over time in the Antarctic

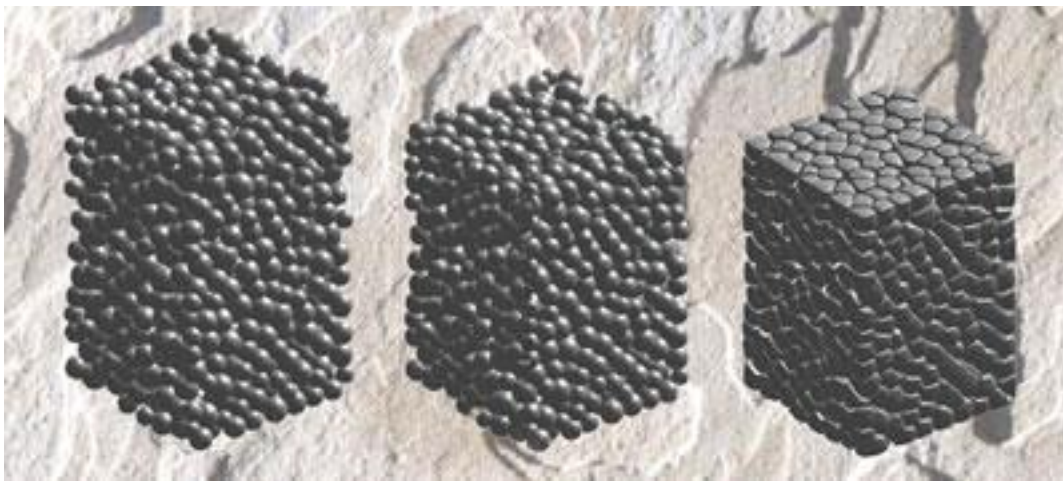
How sediment
becomes rock

in many places where sediment
deposition continues for a long
time, the sediments become buried
deep below the Earth's surface

The pressure on the sediment
increases, causing the particles to
be pressed together

Water solutions filtering through
the pore spaces of the sediment
precipitate cementing material
around the sediment particles

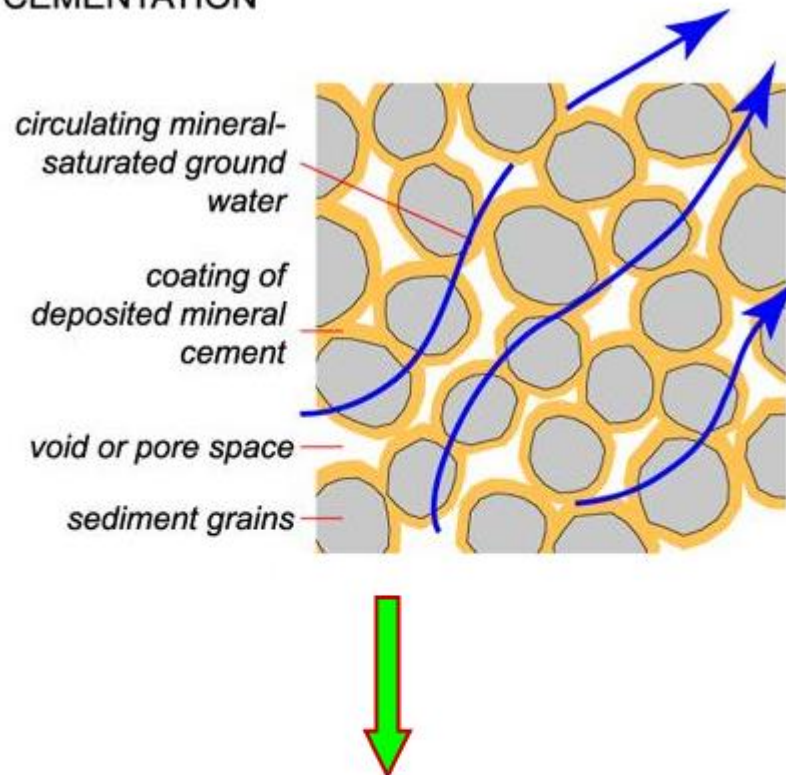
the weight of overlying layers
causes pressure that squeezes
sediments together



water carries dissolved minerals
through the spaces between
sediments and cements them
together

The processes of compaction and cementation cause sediment to be converted into solid sedimentary rock

CEMENTATION



http://www.classzone.com/books/earth_science/terc/content/visualizations/es0605/es0605page01.cfm?chapter_no=visualization

<http://www.learner.org/interactives/rockcycle/change3.html>

<http://www.geolsoc.org.uk/ks3/gsl/education/resources/rockcycle/page3559.html>

Activity 1

Check Your Understanding

Page U12

1. What does the discovery of ancient coal in Antarctica suggest about the past climate of that area?

The discovery of ancient coal in Antarctica suggests the climate was once _____ .

2. Describe how the three main types of sedimentary rocks form.

3. The top of Mt. Everest is made of limestone. What does this suggest about how the topography of that area has changed through time?

Limestone at the top of Mt. Everest suggests Mt. Everest was once _____ .

4. Rock salt is mined throughout the Great Lakes region. What does this suggest about the past climate of this area?

Rock salt being mined in the Great Lakes region suggests the past climate of this area was once _____ .